

ABSTRACT

A device for testing the rebound quality of a golf ball is described. The device includes a substrate of hard, dense material with a level, flat upper surface, the substrate being attached to an accelerometer that is capable of sensing the impact of a golf ball dropped onto the substrate's upper surface. In turn, the accelerometer is connected to a pulse period measuring module capable of determining the period of time between successive impacts as the golf ball freely and repeatedly bounces against the substrate. Further, a computational module capable of determining from three or more successive bounces the mechanical loss the golf ball experiences on each bounce. Three successive impacts against the substrate result in two time period measurements. The first time period is that which elapses between the first and second impacts and the second time period is that which elapses between the second and third impacts. Each respective period is proportional to the square root of the energy imparted to the ball on its previous impact. The simple ratio of the squares of the two measured time periods results in an accurate measurement of ball rebound quality, which can be displayed as a percentage, a value from 0 to 1, or any arbitrary scale, on an attached LCD display. Finally, as the hard, dense substrate will absorb a small portion of the impacting ball's energy, a computation can be made to make slight numerical corrections prior to the display of results. In the case of golf balls, the exact mass of the ball can be carefully controlled by the manufacturer to a universal standard, so that such corrections, although small, can deliver excellent accuracy. In use, the user simply drops a golf ball onto the center of the substrate and allows it to bounce at least three times. The time periods are calculated, corrections are made, and the results are promptly displayed.